

## LOADING & SAVING MADE E-Z

High among the list of things you'll want to be able to do with your **T/S Personal Computer** will be loading and saving operations.

Let's start by defining these two terms:

Loading is a process by which a program — prerecorded on a tape cassette (such as a **TIMEX®** software tape cassette) — is transferred into the computer. When you **load** a program, the computer **reads** the information from the external storage medium (tape) and enters it into its own internal memory. This is accomplished with an "EAR-to-EAR" connection — listening is our equivalent of reading.

Saving, in contrast, is the exact opposite of loading. In this operation, data held in the computer's internal memory is transferred onto an external storage medium (tape). When you **save** a program, the computer **writes** the program onto a (blank) tape cassette. This is accomplished by a "MIC-to-MIC" connection — talking is our equivalent of writing.

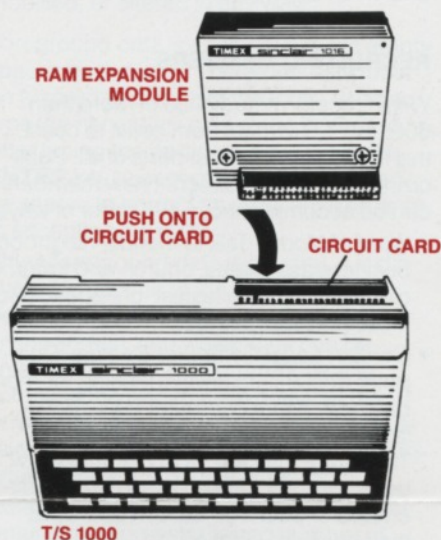
Loading and saving techniques aren't particularly difficult, but just like learning to ride a bicycle or drive a car, it does require a little concentration and practice. So, if you don't succeed the first time, don't give up — just make the appropriate adjustments and try it again.

To **load** and **save**, a number of steps must be performed in their proper sequence. In addition, there are a few "tricks of the trade" we'll tell you about to help make this operation proceed more smoothly. We've combined all of this into an easy-to-follow procedure that shouldn't take you more than a few minutes. Do remember to perform each step in exactly the order in which it is listed.

### PRELIMINARY STEPS

Before starting, install your **TIMEX Sinclair™ Personal Computer** by completing the instructions provided in the User Manual. Make sure that all electrical connections are secure and tight.

If the program size exceeds 2K (instructions with your **TIMEX Software Cassette** note the size), you will need to install the **RAM Expansion Module**. To do so, simply push the RAM Expansion Pack into the



CONNECTING RAM MODULE

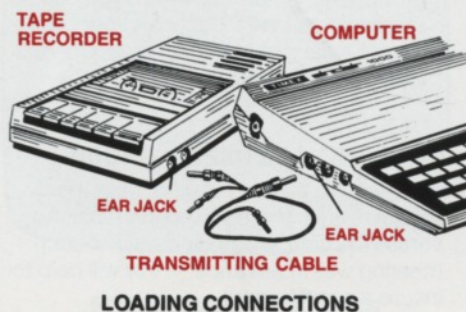
card connector on the rear of your computer.

Make sure that the playback/recording heads of your tape recorder are clean. Excessive dust or dirt could make the **load** or **save** operation much more difficult.

Turn your television set ON; the K cursor will display on the lower left-hand corner of the screen.

### LOADING THE PROGRAM

Place your tape recorder adjacent to your computer. Insert your **TIMEX Software Cassette** into your tape recorder (directions are provided with the tape recorder); it does not matter whether Side A or Side B (unless otherwise noted in the instructions) is used. Then:



1. Press the tape recorder rewind control to fully rewind the tape (if a program has been saved on tape, rewind to the position where the program is to begin.) Stop the tape recorder.
2. Packed into the box with your **TIMEX Personal Computer**, you'll find a cable that has two connectors — on each end of the cable. Plug either of the two connectors into the EAR jack on the computer. At the opposite end of the cable, plug the connector of the same color into the EAR jack on the tape recorder.
3. Set the tape recorder volume control to about 3/4 of maximum volume (about 7, if the control is marked with volume levels).

(Please be aware that the volume level is critical. It may be necessary to rerun the loading procedure several times until you have found the appropriate volume level. You may want to mark this point on the control for easy future reference.)

4. If your tape recorder is equipped with a tone control, set the control for maximum treble and minimum bass (the tone is also an important ingredient in the loading/saving procedure).

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# SO YOU WANT TO START A T/S USERS' GROUP!

Starting a **TIMEX Personal Computer** Users' group is a great idea! A users' group in your area is an excellent way for all **T/S** owners — from the beginner to the expert — to investigate the fascinating world of the **TIMEX Personal Computer**. Your users' group will rapidly become a powerful magnet for the exchange of ideas, programs, equipment, and software.

You'll be looking forward to a pleasurable and rewarding experience — and at the beginning, a busy time, too. So, if you're aware of any other **T/S** owners — who would like to reap the benefits of a **T/S** users' group — get them to pitch in, too.

## DEVELOP A PURPOSE

A users' group is much like any other organization. You'll want to establish the group's direction — and the best way of accomplishing this is to create an informal (at first) charter which defines the purpose, scope, and interests of the group. Formalizing the goals of your group provides general guidelines to help the club "get off the ground" at inception, and keep from straying too far from the "beaten path" during times of dynamic growth. You'll want the charter to be simple, timely, flexible, and at the same time, responsive to the changing needs of its members.

## DEVELOPING AN ORGANIZATION

Now, you'll want to pick out a group name and establish a cadre of officers. A good name not only will project a positive image, but at the same time, suggests the guiding purpose of the organization. Be sure to utilize others to absorb some of the workload (it is unfair to ask you to do everything). And a good way to obtain help is to establish a Board of Directors and appoint the officers of the organization.

Later — as the club grows — ask individual members to devote time and energy to help plan and run the various events; you'll get more out of the group — and so will they.

## LOCATING A MEETING PLACE

Admittedly, this is one of the most difficult — but most important — start-up requirements. You'll want a site that is centrally (but conveniently) located and one that is large enough to comfortably accommodate everyone.

It may be possible to acquire a meeting hall — at little or no charge. Good candidates for accommodations are local computer dealers, public schools, places of worship,

local companies, or local fraternal organizations. When meeting with the appropriate individual, do explain the needs and purpose of your group — and above all, emphasize that your organization is responsible and will properly care for — and clean up — the facility.

## RECRUITING MEMBERS

With a receptive audience of more than 600,000 **T/S** owners from coast to coast, this is one of the easiest parts of all. Publicizing your group to recruit new members can be accomplished in a number of ways:

- **Word of Mouth.** Talk to friends, neighbors, business associates, church and fraternal clubs — this is the fastest, cheapest, and most effective method.
- **Contact Local Computer Dealers.** Computer dealers are always looking for more business. More computer users translates into more potential customers. Therefore, they are most helpful to new users' groups. Do be sure to drop off literature or post it on bulletin boards at their business location.
- **Newspaper and Radio Announcements.** Most local newspapers and radio stations provide free publicity — if you'll prepare a simple press release. If you've never prepared a press release, pick up a book at the library or call the newspaper or radio station for help. They'll either tell you how to prepare one or take the announcement over the telephone.
- **Communicate with Local Businesses.** Almost all businesses are interested in encouraging their employees to develop new skills; computer knowledge is most certainly a valuable asset in today's technological world. Contact the Personnel or PR department and tell them about your group.
- **Use *RAMBLINGS* to Spread the Word.** If you request publicity and provide us with the appropriate information (name of group, phone number where you can be reached, etc.) we'll publicize your group in your local geographical area. Contact the **RAMBLINGS** Editor.

## RUNNING YOUR USERS' GROUP

Once you're off and running, hold meetings at regularly scheduled intervals. Advertise the time, place, and date of each meeting well in advance — this will help to insure a good turnout.

During the meeting keep business (club business) short and to-the-point. Group interest is best stimulated by providing something for everyone — from the unsophisticated beginner to the computer expert. Club members will eagerly look forward to demonstrations (contact experienced club members, local dealers, and computer manufacturers), speakers, and special events (i.e., computer fair or trip to a computer exhibition).

Finally, the users' group shouldn't be a personal financial burden. Charge a membership fee (\$10 to \$25 is typical) to put the users' group on a self-sustaining basis. This will help to offset the expenses associated with publicity and postage.

## GROUP NEWSLETTER

You'll want to start a newsletter to promote the group and also provide a forum to exchange ideas, programs, and operating techniques.

The newsletter need not be expensive or elaborate — photocopies will do fine! But do be sure to present a professional image — typos, misspelling, and sloppy typing can turn the best newsletter into one that is "circular filed," instead of read.

Don't be bashful about asking for articles, programs, and other contributions from the members — and above all, ask the members to volunteer their services to help write, produce, and mail the newsletter.

The expense of the newsletter can be offset by soliciting advertisements from local and national dealers. The very real danger here is that the newsletter could become over-commercialized; take special pains to avoid this.

## TIMEX SUPPORT

**TIMEX** will assist your **T/S** user group by providing technical support, the **TIMEX** newsletter, and by answering your inquiries. Please direct your users' group questions to Margo Murphy.

We look forward to hearing about your new users' group — good luck!



# BITS/BYTES

Invariably, almost any discussion of the basic characteristics of a computer's operation includes references to a computer's screen. Obviously, it would be helpful to know what a screen is, and how it operates.

For the sake of this discussion we are going to examine a program-generated screen to define its contents and operation.

## CONTENTS OF A SCREEN

As illustrated below, a data processing screen is a display on the picture tube of your television set. It is roughly the equivalent of any form that normally is printed on paper (a familiar example would be an employment application form). The one characteristic that is common to all forms is the fact that information must be entered into blank spaces to complete the form.

A computerized screen display is no different. However, in a data processing environment, the form appears on the tube of your television set instead of being printed on paper. Likewise, a keyboard is used to type in the characters instead of using a pen or pencil to write on paper.

Look at the TV display as each character is typed and note that each character is displayed on the screen just as soon as it is entered. This permits you to observe the screen to determine that the data has been correctly typed.

**BACKGROUND** **FOREGROUND**

**USED CAR INVENTORY**

ID NO: 6891 SERIAL NO: DW326

MAKE: PLY YEAR: 1975

MODEL: HORIZON COLOR: GREEN

RETAIL PRICE: \$3199.00

WHOLESALE PRICE: \$1864.00

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**SOLD: \$** **DATE:**

**FIELD**

## TYPICAL DATA PROCESSING SCREEN

We will use the record layout which we created for the Organizer to represent our typical screen. Look at the illustration above and note that the screen's contents can be classified as either **background** data or **foreground** data.

Background data is the equivalent of the labels that are preprinted on the form to

categorize the type of information that must be entered to complete that portion of the form. These labels are equivalent to those that are preprinted on paper: They appear — in the same location — each time the screen appears; they cannot be erased, modified, or altered in any way.

Foreground data is analogous to the empty spaces on the form. Therefore, data must be entered to complete the form. To do so, type the necessary data at the keyboard. After typing the pertinent data, press the **ENTER** key to accept the data (data can be altered to correct an error, anytime prior to accepting the data).

When foreground data is entered, it is displayed in an area of the screen called a **field**. (A field, in this context, is an area on the screen, into which data can be entered.) You enter the current data to complete the field (please note that the computer is also capable of completing a field by automatically displaying the appropriate data at the particular location).

Field size can also be a consideration; at times, only a preestablished number of characters can be entered into a field. In other instances, the field size is not defined to permit the entry of whatever characters are necessary.

Finally, many **TIMEX** application programs display only a single line of the screen at any one time. This step-by-step approach makes it easy to complete the screen. However, each line displayed contains the needed background and foreground areas.

## TYPES OF SCREENS

Several types of screens are utilized by the **TIMEX Personal Computer**. The most common ones are those for programming, menus, data entry, and display.

**BACKGROUND** **FOREGROUND**

10 PRINT "I AM THINKING OF A"

20 PRINT "NUMBER BETWEEN 1 AND 100"

30 K

## PROGRAMMING SCREEN

**Programming screens** are characterized as a (mostly) blank screen and a cursor at the bottom left-hand corner of the screen. As the name implies, and as illustrated, this type of screen is used to program and provide instructions to the computer.

**PSION COMPUTERS**

VU-FILE

1 - SET RECORD FORMAT

2 - ENTER VU-FILE

3 - SAVE VU-FILE AND DATA

4 - SET PRINTER FORMAT

PRESS 1 TO 4 FOR DESIRED OPTION

## TYPICAL MENU

**Menu Screens** are similar to a menu of a restaurant; they permit the selection of a particular option from a number of alternate options. As typically illustrated, an option is selected by pressing the keyboard number key that corresponds to the number of the menu option (it is usually *not* necessary to press the **ENTER** key).

We have already described the **data entry screen**; they are screens — with a foreground and a background — into which data is entered.

**COMMANDS ARE** **ENTER** **ALTER**

INFORM FORWARD BACK RESET ORDER

SELECT QUIT LIST PRINT COPY DELETE

EACH DATA FIELD. STOP TO EXIT

## TYPICAL DISPLAY SCREEN

Finally, a **display** screen is one in which only background data is displayed. This data cannot be altered or erased. Examples of a display screen would be the Organizer Command Screen (illustrated) or the Checkbook Listing Screen (all transactions are listed).

## Loading &amp; Saving Continued

5. Confirm that the K cursor is displayed on the screen. Press the J key on the keyboard to initiate the **LOAD** command (the word **LOAD** will appear on your television screen).  
Should the wrong command be entered accidentally, it's easy to change; just press the **SHIFT** and the **DELETE** (0) keys simultaneously to delete the improper command, then press the proper key.
6. Simultaneously press both the **SHIFT** and the letter P keys to produce the quotation marks.
7. At the keyboard, type the name of the program (i.e., "VU-FILE") *exactly* as it is printed in the instructions (or on the cassette. If you are loading a program you've created, type the name that you've assigned to it).
8. Repeat Step 6.
9. Press the PLAY key on your tape recorder. Wait for a few seconds to allow the tape leader (the non-recording portion of the tape) to pass through the recording head.
10. Press the **ENTER** key on the keyboard to commence the **loading** process.  
During the loading, your television screen will display different kinds of horizontal lines. This is perfectly normal. The lines — especially the thick, solid black ones, are indicating that the program is loading normally.  
Note that the total loading time depends upon the size of the program. Naturally, longer programs require more time. Your **TIMEX Software Cassette** instructions will indicate the loading time for that specific program. However, never, never move or otherwise disturb the computer during the load; otherwise the computer may fail to load the program.
11. Upon completion of a successful load, (and with a little practice you will be able to load successfully); either of the following will display on your television screen:
  - The symbols 0/0 in the lower left-hand corner of the screen
  - The Main Menu or some other portion of the program
 Instructions, that accompany your **TIMEX Software Cassette**, will tell you which display will appear on your television screen after a successful load.
12. Turn your tape recorder OFF (it can now be disconnected from your **TIMEX Sinclair Personal Computer**, if desired).

13. If appropriate (and if you are not concerned with losing data), press the **RUN** (R) and then the **ENTER** keys to initiate the program. Follow the instructions provided with your **TIMEX Software Cassette**. (Note that in some instances you will not want to **RUN** the program, instead a **GOTO** command will initiate the program; instruction with your software cassette will tell you when to do this.)

## IF THE PROGRAM FAILS TO LOAD

If the program fails to load after your first attempt, don't get discouraged: A little practice and experimentation should resolve the difficulty.

There are, however, a few common reasons why the computer didn't load, and we can use this knowledge to perfect our loading technique.

**Loose Connections.** Loose electrical connections can impede the loading process. Therefore, let's check all electrical connections — between the computer, the television, and the tape recorder — before we try again.

**Improper Connections.** Remember, the computer and the tape recorder must be connected "EAR-to-EAR" with the same color connectors. So, let's make certain that we've connected them right!

**Ram Module Sensitivity.** The contacts on this unit are sensitive to movement. So, let's try to keep it steady during operation.

**Wrong Volume Level.** Here's where we might need to experiment a bit. Try to load your **TIMEX Sinclair Personal Computer** at various (higher/lower) volume levels until the correct setting is found.

## Computer Does Not Read Program Name.

This is one of the most common loading difficulties and the reasons for this vary, ranging from a "bad spot" on the tape, to the users renaming of a program (after you've saved data). Fortunately, this difficulty is easily resolved by performing the following steps:

1. Complete Steps 1 through 5 of the loading procedure.
2. Instead of completing Steps 6 through 8, Press the **SHIFT** and the P keys twice to input two sets of quotes (" "). In essence, this technique "tells" the computer to load whatever program is encountered first, rather than to look for a program with a specific program name.
3. Complete steps 9 through 13 of the loading procedure.

## MALADJUSTMENT OF RECORDING HEAD

You can verify whether or not the recording head of your tape recorder is improperly aligned by this simple test:

Run the tape through your tape recorder just as you would to listen to music. As the program runs, you will hear a shrill tone which identifies the program. The tone should be audible as a clear sound; if it appears to be muffled, the recorder head is misaligned and should be adjusted (by your local electronics store).

(Please note that an alignment problem may only affect a particular software cassette. Other tapes may run perfectly fine without an adjustment.)

## SAVING A PROGRAM

Although similar to the loading protocol, the saving procedure requires a different type of tape recorder-to-computer interconnection.

Firstly, why would you want to save a program. The following lists the principal reasons:

- To save a program which you have created.
- Copy the original program to obtain a backup tape in case the original tape was somehow damaged or destroyed; thus the entire program would not have to be recreated.
- Save a tape onto which data has been stored (not to be run through the **RUN** command).
- You can update a tape (i.e., transaction tape) holding data (i.e., last month's sales receipts) by adding more recent data (i.e., this month's sales receipts).

There are two types of saves that are used to save programs. They are: A Manual Save, and a Program-Controlled Save.

## MANUAL SAVE

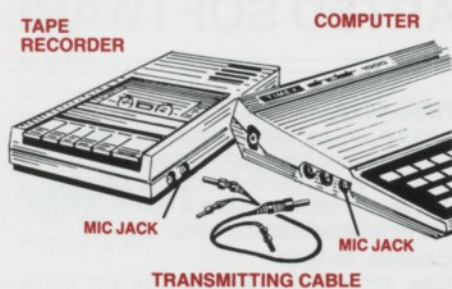
This type of procedure is used to save a program which you have created, or to backup your original program by copying onto a spare tape cassette.

To run a manual **save**:

1. Perform all Preliminary Steps listed in the Loading Procedure.
2. Insert a blank, high-quality, non-stereo tape cassette into your tape recorder. (Unless otherwise indicated by **TIMEX Software** instructions, the running time of the cassette generally should not exceed 30-minutes. In general, the more programs you have on a cassette, the harder it is to find a particular program

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## Loading &amp; Saving Continued



## SAVINGS CONNECTIONS

and the longer you will have to wait for the computer to find the program. 120-minute cassette tape is too thin and should not be used.)

Rewind the tape to its starting position, or set the tape to any other desired recording position (note that if you **save** a program on an area of the tape which already contains a program, the original program will be deleted (actually written-over) and will be replaced by the new program.

3. Plug one end of the double-connector cable into the MIC jack of your **TIMEX Sinclair Personal Computer**. At the opposite end of the cable, plug the connector of the same color into the MIC jack of the tape recorder.
4. To **save** the program, wait until the program has finished executing or press the **BREAK** (SPACE) key to interrupt the program (in the latter case, an error message will display at the bottom of the screen).
5. Press the **SAVE** (S) key. The command, **SAVE** will display on the lower left-hand corner of the screen.
6. Simultaneously press both the **SHIFT** and the P keys to produce a pair of quotes (""). The L cursor will appear.
7. At the keyboard, type the name that you are assigning to the program for identification and (future) loading purposes.

Then, repeat Step 6. The command should look like this:

**SAVE "NEW PROGRAM NAME"**

8. Simultaneously press the tape recorder **RECORD** and **PLAY** controls. Wait for a few seconds for the tape leader to pass through the recording head.
9. Press the **ENTER** key.

If your tape recorder is equipped with a tape counter, it is a good idea to note the counter setting. This will help you to more quickly locate a saved program in the future.

Running the **save** causes your TV screen to display a pattern of alternating thick, thin and wavy lines; this indicates that the program is being recorded on the tape cassette. Don't be surprised if it takes longer to **save** a program than it does to **load** the same program; this is quite common!

10. Upon completion of a successful save, the symbols 0/0 will display on the lower left-hand corner of the screen. (If the autostart feature has been employed, 0/0 will *not* display. Instead the program will automatically advance to the menu or to some other part of the program specified by the GOTO command.)  
Stop the tape recorder (it can be disconnected, if desired).

When you **save** a program which contains transaction data, *do not* initiate the program with a RUN command. Why not? Well, the primary reason is related to the fact that the RUN command clears all variables; thus all transaction data will be deleted and would unnecessarily need to be reentered into file.

## PROGRAM-CONTROLLED SAVE

A program-controlled **save** is executed from a command that is incorporated within a program. The statements which execute the save are typically demonstrated by the routines below:

```
1500 PRINT "ENTER PROGRAM
      NAME"
1510 INPUT N$
1520 PRINT "PRESS PLAY AND
      RECORD CONTROLS ON YOUR
      TAPE RECORDER; THEN PRESS
      ENTER KEY"
1530 INPUT X$
1540 SAVE N$
```

The above routine permits the programmer to assign a name to the program to be saved.

```
1500 PRINT "PRESS PLAY AND
      RECORD CONTROLS ON YOUR
      TAPE RECORDER; THEN PRESS
      THE ENTER KEY"
1510 INPUT X$
1520 SAVE "NEW PROGRAM NAME"
```

This routine saves the program under the name already established (i.e., "NEW PROGRAM NAME").

To utilize the program-controlled save:

- 1) Perform steps 1 through 3 of the Manual Save procedure.
- 2) As the program executes, it will pause at the command where you must start the tape recorder. Simply follow the prompts which are displayed on the screen.

Note that if data has been entered, you won't want to use a RUN command to initiate the program (for the reason previously

discussed). Instead use either a GOTO command or the automatic restart technique to commence the program.

To utilize a GOTO command when the K cursor is displayed, simply type the GOTO command (i.e., GOTO 100) *instead* of entering the RUN command.

Should you desire to make use of the autostart feature, insert a GOTO command into your program — immediately following the SAVE command (i.e., 1550 GOTO 200 or 1530 GOTO 200). Make certain that the GOTO line number specifies a line prior to the lines which specify the arrays and/or variables.

Finally, the saving techniques used to **save** the program on certain **TIMEX** prerecorded Tape Cassettes deserve special attention.

Certain **TIMEX** programs utilize a menu-driven **save** (which incorporates the autostart feature). To utilize this option:

A Menu-Driven Save is an option listed on the Main Menu (of a **TIMEX Software Program**) to let you **save** your program (and related transaction data) quickly and easily.

Utilize this option in the following manner:

1. Complete Steps 1 to 3 of the Manual Save Procedure.
2. Follow the software instructions to return to the Main Menu. Then, select the appropriate option (option 3 in the illustration below).

**PSION COMPUTERS**

VU-FILE

1 - SET RECORD FORMAT

2 - ENTER VU-FILE

3 - SAVE VU-FILE AND DATA

4 - SET PRINTER FORMAT

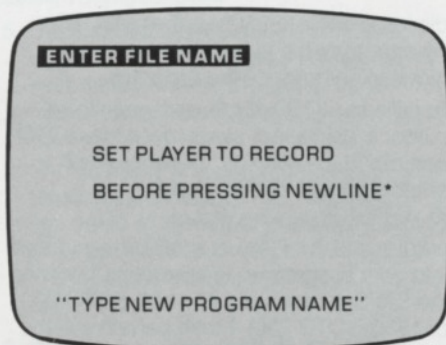
PRESS 1 TO 4 FOR DESIRED OPTION

## TYPICAL MENU

3. At the bottom of the screen, an L cursor is displayed. Simply type the name of the program to be saved (i.e., "VU-FILE") (you don't need to enter the quotes, since the **TIMEX** program already does this for you.)  
Be sure to enter the current name of the program; if you rename it, difficulties may be encountered when you try to **load** the **saved** program.

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# PREVIEWS



## RUNNING THE SAVE OPTION

After saving a program, label the cassette with the name of the program and the counter setting, for future reference.

That's all there is to saving a program! Easy, isn't it?

## LOADING A SAVED PROGRAM

When you load a program saved from a **TIMEX** tape cassette, the computer usually looks for the original program name and does not recognize the new name that has been assigned to the saved program (assuming that you have renamed the program). In this case, utilize the technique discussed in Step 2 "Computer Does Not Load Program", to achieve a successful load of the saved program.

\*Actually the **ENTER** key on the keyboard.



## MAILBOX

First and foremost, **RAMBLINGS**, the **TIMEX** Computer Club Newsletter is a forum for you, the **T/S** user. Through this vehicle, **T/S** users — throughout the country — can exchange valuable and useful techniques, ideas, programs, and discuss other topics of mutual interest.

We gratefully solicit *your* articles, programs, suggestions, critiques, and brainstorm. Please mail your contributions to the **RAMBLINGS** Editor.

And if we publish your material during May, we'll say thank you by sending you a free **TIMEX** t-shirt. Please state your shirt size with your contribution.

## WE'VE GOT SOFHEARTED SOFTWARE

All **TIMEX** software is designed with *you* in mind. As a result, you get easy-to-use, ready-to-go software products at a price that is E-Z on your pocketbook. There's no fuss or bother either, just load the tape cassette and away you go!

This month, we've got a treasure chest full of sparkling-new software releases ready for you. Best of all, your **TIMEX Sinclair Personal Computer** will give you more help and pleasure than ever before.

### TIMEX SOFTWARE — FOR THE HOME

#### KEYBOARD CALCULATOR

Helps you perform numerical computations (much like a hand calculator — but with considerably more power and it's easier to use). It can be used for virtually any statistical, scientific, engineering, or financial calculations.

Cassette: 02-2000  
Size: 2K  
Price: \$9.95\*

#### THE HOME IMPROVEMENT PLANNER

Lets you store up to 20-room measurements (length, width, height). You can compute the total area of each (wall, floor), estimate the costs of painting, wallpapering, carpeting, draw house blueprints, and print them.

Cassette: 03-2008  
Size: 16K  
Price: \$14.95\*

#### THE HOME ASSET MANAGER

A valuable home inventory program that can be irreplaceable in the event of fire or theft. Records the date of purchase, the place of purchase, product description, price, serial number, and model number. It can sum the total value of all assets.

Cassette: 03-2009  
Size: 16K  
Price: \$12.95\*

#### THE IRA PLANNER

This retirement planning program lets the user determine the net effect of any IRA plan. Periodic contributions, inflation adjustment, interest earned, and a host of other variables are established and the total retirement amount is calculated in terms of both inflationary and current dollars.

Cassette: 03-2010  
Size: 16K  
Price: \$15.95\*

#### AUTOMOBILE ANALYZER

Tracks car routine maintenance operations and automatically reminds you when the next servicing is due. Program includes trouble-shooting tools to diagnose any problems dealing with the engine, transmission or front end.

Cassette: 03-2011  
Size: 16K  
Price: \$12.95\*

#### REAL ESTATE INVESTMENT ANALYSIS

Lets the user explore two different investment strategies. The first selection allows the user to choose between renting or buying real estate. The second option provides a detailed analysis of a rental investment property.

Cassette: 03-2012  
Size: 16K  
Price: \$14.95\*

#### PERSONAL FINANCE PLANNER

This financial planner helps you perform calculations to finance a house, a car, maintain savings accounts, repay loans, and calculate an amortization schedule (can be generated for any of the financial programs).

Cassette: 03-2013  
Size: 16K  
Price: \$12.95\*

#### PORTFOLIO ANALYSIS

Program performs minimum risk and market sensitivity calculations for a portfolio composed of a set of stocks. A portfolio is developed to provide the minimum amount of market risk at a given degree of sensitivity.

Cassette: 03-2014  
Size: 16K  
Price: \$14.95\*

### TIMEX SOFTWARE — FOR YOUR GROWING BUSINESS

#### THE LIST MANAGER

Contains two programs: Mailing List — keeps track of personal or business mailing lists of up to 115-names by name, address, or zip code. Phone Book — keeps track of personal or business numbers for up to 180-names.

Cassette: 03-1004  
Size: 16K  
Price: \$14.95\*

#### STOCK MARKET — TECH. ANALYSIS I

Program uses "technical analysis" of price and volume data to forecast the direction of the market or of any stock. You may track up to 6-stocks without reloading the program. Requires 30-trading days of data, closing price, and day's volume for data base loading. The computer generates graphs for each stock, and provides a one-page analytical summary of the technical position of each stock average. Menu-driven approach lends itself to ease-of-operation.

Cassette: 03-1005  
Size: 16K  
Price: \$17.95\*

### TIMEX SOFTWARE — FOR YOUR FAMILY'S EDUCATION

#### PRESIDENTS

Become familiar with past and present Presidents of the United States. Two main options are available: (1) Presidents are presented and you must identify the term(s). (2) Terms are presented and

\*Suggested retail price

Continued on page 7

*Softhearted Software Continued*

you must identify the President. It's a challenging and enjoyable learning experience.

Cassette: 03-3003  
Size: 16K  
Price: \$10.95\*

**PUNCTUATION MASTER**

Increases skills in the use of periods, question marks, commas. Teaches basic rules of correct punctuation while reinforcing the correct usage; includes practice exercises and a timed test.

Cassette: 03-3005  
Size: 16K  
Price: \$10.95\*

**ATOR THE ABC GATOR**

This program is designed to promote the recognition of each letter of the alphabet and to read its sequence. Cleverly combines computer instruction, music, and video games in a format that is carefully structured to ensure success.

Cassette: 03-3006  
Size: 16K  
Price: \$12.95\*

**TIMEX SOFTWARE — FOR YOUR ENTERTAINMENT AND ENJOYMENT**

**THE CHALLENGER I**

Program: Amazer — enter the maze from the top and work your way down to the bottom without being captured by one of the robots. Game provides 10-levels of play ability.

Program: Tic-Tac-Toe — match your skill with the T/S 1000, as your opponent. The object, of course, is to get three X's in a row.

Cassette: 02-4002  
Size: 2K  
Price: \$9.95\*

**THE MIXED GAME BAG III**

Cassette contains five varied and exciting speed games: In BLITZ, bomb the cities below; provides 256-speeds of play. RATS NEST, trap your T/S 1000 "opponent" (also with 256-speeds). THE SNAKE, collect the speeding dollars and snake through the pit. SKETCH PAD, you draw your favorite pictures, store them on tape and recall them on first load. TO CROSS THE ROAD, move across the highway without being hit by speeding cars.

Cassette: 02-4003  
Size: 2K  
Price: \$9.95\*

**BIGFLAP ATTACK**

Imagine that you're being attacked by giant birds! To defend yourself and score points, you must shoot the birds right between the eyes. Program provides 10-levels of skills with unlimited scoring possibilities.

Cassette: 03-4007  
Size: 16K  
Price: \$12.95\*

**RAM RUNNER**

A challenging game providing 26-levels of skill. The object: Move around the field and ram the other runners without running into an obstacle. How long can you survive?

Cassette: 03-4008  
Size: 16K  
Price: \$12.95\*

**PINBALL**

Plays just like real pinball game complete with flippers, bumpers, "nudge," bonus points and more.

Cassette: 03-4010  
Size: 16K  
Price: \$12.95\*

**STOCK MARKET GAME**

Are you a bull or a bear? Play the stock market and find out! This realistic simulation game lets you analyze information, buy and sell stock, take out and pay off loans — and win, if you can accumulate \$50,000 in "The Market".

Cassette: 03-4011  
Size: 16K  
Price: \$12.95\*

**FROGGER**

Works just like the arcade game, but without sound. You must avoid traffic, snakes, crocodiles and treacherous diving turtles by "hopping" the frog. The frog must reach home before time runs out.

Cassette: 03-4012  
Size: 16K  
Price: \$17.95\*

**FORTRESS OF ZORLAC**

This one is a super fast game in which you are the commander of a fleet of spaceships. Your mission: Ride the galaxy of the dreaded alien, ZORLAC. You'll need more than just luck to destroy ZORLAC.

Cassette: 03-4013  
Size: 16K  
Price: \$10.95\*



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Packaged in quantities of 3-rolls for just \$5.95, thermal paper for the **TIMEX T/S 2040 Printer** can now be ordered direct from **TIMEX**.

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**COMPUTER SCHEMATICS FOR SALE**

Electrical schematics of both the **T/S 1000** and the **T/S 1016 RAM Expansion Module** are now available — at a nominal charge of \$2.50 (each).

To order your schematic(s), mail your request — specifying which schematic you want together with your name and address (please print) and your check or money order (never mail cash) for the appropriate amount to:

**Timex Schematics**  
P.O. 1378 Dept. RAMB  
Little Rock, AR 72203

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# COMPUTER VOCABULARY

Computer terminology is a specialized and unique language. To the first-time or uninitiated computer owner, this "jargon" can be misleading or confusing.

Each issue, we'll list some of the more common (and not so common) computer terms. These highly simplified definitions will help you better understand your computer and its "lingo". Spend a few minutes to learn these terms, and you'll soon be talking like a computer professional.

**Backup (tape or disc)** — Copy of a program on a tape cassette or disc. The program is copied from the master onto a spare cassette or disc to prevent the loss of the program in case the master is somehow damaged or destroyed.

**Chip** — One or more chips usually comprise a major part of the CPU. A chip is a manufactured silicone wafer, upon which certain operating functions (i.e., operating system program) have been etched.

**Data Entry Field** — An area on the screen into which data is entered either by the user's use of the keyboard or automatically by the computer. The data is displayed in the

field as it is entered. This allows the user to verify that the data has been entered correctly.

**Enter** — In the **TIMEX Sinclair Personal Computer**, ENTER is a keyboard command which tells the computer that you've finished a certain operation (i.e., input data at the keyboard). (It is analagous to an ACCEPT command.)

**Execute** — the computer's action of carrying out a particular instruction (e.g., running a program).

**Hard Copy** — Data, in the computer, which is reproduced onto paper by the printer.

**Inverse** — A character (can be a series of characters consisting of letter(s), number(s), or special character(s)) which is displayed on the screen or printed on hard copy as a white figure in a black background.

**Main Frame** — Used to describe the physically large, very powerful, very expensive computer systems.

**Main Menu** — The place from which all operations of a particular software application

are begun. This Main Menu is a screen display which lists a number of options. The user selects an option by pressing the numbered keyboard key which corresponds to the number of the option.

**Master (tape or disc)** — Original program recorded onto a storage media such as a tape cassette or disc.

**Operating System** — Software in ROM (read only) memory, that permits the computer to perform its various functions and operations. Since it is contained in the ROM memory, it can neither be amended or altered by the operator.

**Syntax** — Rules that apply to the manner in which a program statement should be written. The **TIMEX Sinclair Personal Computer** will display a syntax cursor(s) if the format of the statement is incorrect.



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